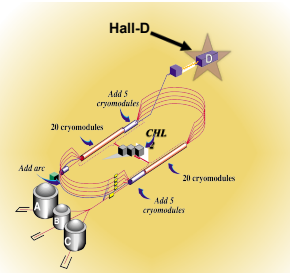
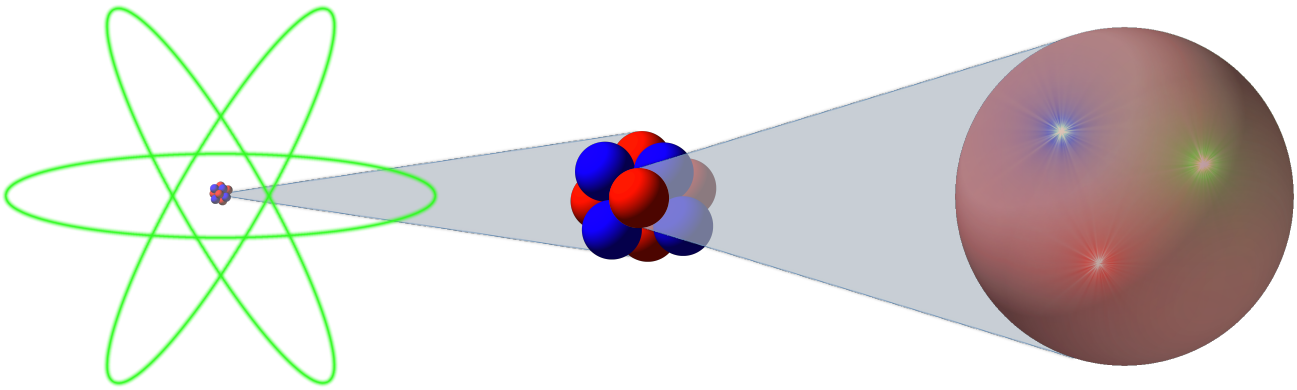
The GlueX Experiment

in Hall-D





All matter in the world is composed of *Atoms*.

The atoms have a nucleus made of *protons* and *neutrons*.

The protons and neutrons are made up of even smaller particles called *Quarks*.

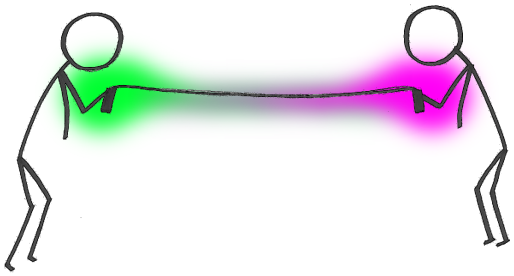
Quarks are held together by the *color* force that acts like glue*. Understanding the nature of this force allows us to understand how the matter in the universe is held together

*99% of the proton mass comes from the glue!

Curiously, quarks never exist on their own. They are always attached to other quarks. The simplest quark structures have only 2 quarks. These are called *mesons*.

- Theorists predict the "glue" that holds quarks together can change the properties of the meson when it gains energy and becomes excited.

- The GlueX experiment will attempt to produce some of these excited mesons and measure their properties.



An un-excited meson can be thought of as two quarks held together by a stationary rope.

An excited meson can be thought of as two quarks held together by a rope that has energy. (Sort of like a jump rope.)

Find more info at http://wiki.gluex.org